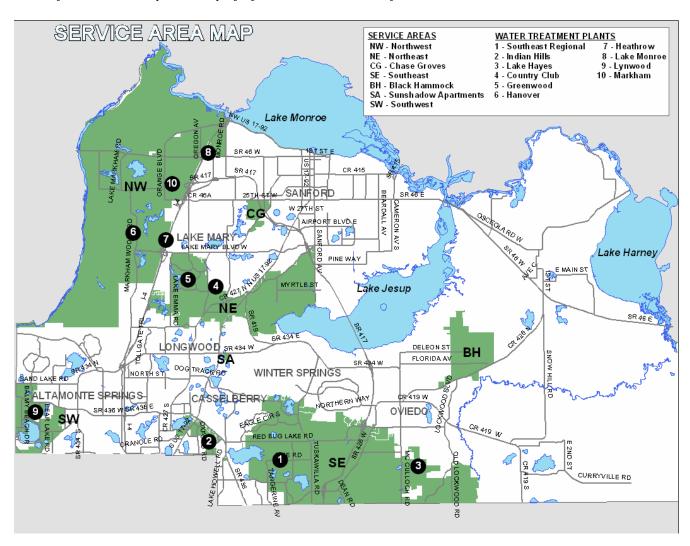
# 2002 Annual Drinking Water Quality Report Seminole County Environmental Services Department

Seminole County is very pleased to provide you with the 2002 Annual Drinking Water Quality Report. We want to keep you informed about the excellent water and services delivered to you over the past year. Our goal is and always has been, to provide to you a safe and dependable supply of drinking water. Our water source is deep wells that draw water from the Upper Floridan Aquifer and is chlorinated for disinfection purposes and then fluoridated for dental health purposes. Also, the pH of the water is adjusted to protect copper pipes from corrosion.

This report presents 2002 water quality results and what they mean. If you have questions about this report or concerning you water utility, please contact our Report Coordinator at 407-665-2121.

The Seminole County Environmental Services Department routinely monitors our 10 water systems (see map below) for contaminants in drinking water according to Federal and State laws, rules, and regulations. Except where indicated otherwise, this report is based on the results of our monitoring for the period of January 1 to December 31, 2002.

We at Seminole County Environmental Services Department work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water source, which is the heart of our community, our way of life and our children's future.



The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- (E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

In the table on the next page, you may find unfamiliar terms and abbreviations. To help you better understand these terms we've provided the following definitions:

- Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
- Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- "NA" means not applicable.
- "ND" means not detected and indicates that the substance was not found by laboratory analysis.
- Parts per million (ppm) or Milligrams per liter (mg/l) one part by weight of analyte to 1 million parts by weight of the water sample.
- Parts per billion (ppb) or Micrograms per liter ( $\mu g/l$ ) one part by weight of analyte to 1 billion parts by weight of the water sample.
- *Picocurie per liter (pCi/L) measure of the radioactivity in water.*
- TTHM Total Trihalomethanes

### WATER QUALITY TESTING RESULTS – BLACK HAMMOCK

Contaminant and Unit	Dates of	MCL	Level	Range of Results	MCLG	MCL	Likely Source of Contamination
of Measurement	sampling (mo./yr.)	Violation Y/N	Detected	ð			·
Alpha emitters (pCi/l)	1/02 3/02	No	2.6	ND – 2.6	0	15	Erosion of natural deposits
Inorganic Contaminan	ts						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	2/02 3/02	No	0.0171	0.010 - 0.0171	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (ppb)	2/02 3/02	No	7.4	ND – 7.4	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (ppm)	2/02 3/02	No	1.24	0.64 – 1.24	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nickel (ppb)	2/02 3/02	No	1.2	ND – 1.2	N/A	100	Pollution from mining and refining operations. Natural occurrence in soil.
Selenium (ppb)	2/02 3/02	No	7.9	ND – 7.9	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (ppm)	2/02 3/02	No	45.1	28.0 – 45.1	N/A	160	Salt water intrusion, leaching from soil
Stage 1 Disinfectant/Di	sinfection By	y-Product (D	/DBP) Paran	neters			
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2002	No	54.4 <sup>1</sup>	40.9 – 64.4	NA	100	By-product of drinking water disinfection
Lead and Copper (Tap	Water)		l				
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL	Likely Source of Contamination
Copper (tap water) (ppm)	2002	No	0.057	0	1.3	1.3	Corrosion of household plumbing systems
Lead (tap water) (ppb)	2002	No	4.4	0	0	15	Corrosion of household plumbing systems

<sup>1.</sup> Value is annual average

As you can see by the tables, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements.

# WATER QUALITY TESTING RESULTS - CHASE GROVES

Radiological Contamin	ants						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Alpha emitters (pCi/l)	3/02	No	1.2	1.0 – 1.2	0	15	Erosion of natural deposits
6. Radium 226 or combined radium (pCi/l)	6/02	No	0.7	0.6 - 0.7	0	5	Erosion of natural deposits
Inorganic Contaminant	ts						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	3/02 6/02	No	0.0197	0.0102 - 0.0197	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Cadmium (ppb)	3/02 6/02	No	0.2	ND – 0.2	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	3/02 6/02	No	1.1	ND – 1.1	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (ppm)	3/02 6/02	No	0.773	0.620 - 0.773	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nickel (ppb)	3/02 6/02	No	27.9	ND – 27.9	NA	100	Pollution from mining and refining operations, natural occurrence in soil.
Nitrate (as Nitrogen) (ppm)	3/02 6/02	No	0.13	ND – 0.13	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	3/02 6/02	No	25.9	16.0 – 25.9	NA	160	Salt water intrusion, leaching from soil
Stage 1 Disinfectant/Dis	sinfection B	y-Product (D	/DBP) Paran	neters			
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2002	No	35.4 <sup>1</sup>	14.5 – 52.7	NA	100	By-product of drinking water disinfection
Lead and Copper (Tap	Water)			<u>'</u>			,
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL	Likely Source of Contamination
Copper (tap water) (ppm)	2001	No	0.16	0	1.3	1.3	Corrosion of household plumbing systems
Lead (tap water) (ppb)	2001	No	1.2	0	0	15	Corrosion of household plumbing systems

<sup>1.</sup> Value is annual average

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The state allows us to monitor some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

# WATER QUALITY TESTING RESULTS - NORTHEAST

Microbiological Contar	ninants						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Highest Monthly # Positive Samples	MCLG	Presence of coliform bacteria in no more than one sample collected in a month		Likely Source of Contamination
Total Coliform Bacteria	2002	No	1	0			Naturally present in the environment
Radiological Contamin	ants						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Alpha emitters (pCi/l)	2/02	No	1.1	ND – 1.1	0	15	Erosion of natural deposits
Inorganic Contaminant	ts						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2/02	No	0.81	0.80 - 0.81	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Sodium (ppm)	2/02	No	7.0	5.9 – 7.0	N/A	160	Salt water intrusion, leaching from soil
Stage 1 Disinfectant/Dis	sinfection B	y-Product (D	/DBP) Paran	neters	I.	l	
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2002	No	57.2 <sup>1</sup>	43.8 – 74.0	NA	100	By-product of drinking water disinfection
Lead and Copper (Tap	Water)		l		1	I.	
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL	Likely Source of Contamination
Copper (tap water) (ppm)	2001	No	1.3	2	1.3	1.3	Corrosion of household plumbing systems
Lead (tap water) (ppb)	2001	No	6.7	0	0	15	Corrosion of household plumbing systems
		SEC	CONDARY	L CONTAMINANT	S TABLE	<u> </u>	

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Highest Result	Range of Results	MCLG	MCL	Likely Source of Contamination
Iron (ppm)	2/02 6/02	Yes	0.66	ND – 0.66	NA	0.3	Natural occurrence from soil leaching

<sup>1.</sup> Value is annual average

A single sample violation for iron occurred at the Greenwood Lakes Water Treatment Plant. Three subsequent samples were collected and analyzed in June 2002, and iron was not detected. Iron was also not detected in 2001 sampling. Secondary contaminants are monitored for aesthetic concerns only, and have no related health concerns.

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### WATER QUALITY TESTING RESULTS – NORTHWEST

Contaminant and Unit	Dates of	MCL	Level	Range of Results	MCLG	MCL	Likely Source of Contamination
of Measurement	sampling	Violation	Detected	8			·
	(mo./yr.)	Y/N			_		
Alpha emitters (pCi/l)	3/02 4/02 6/02	No	6.9	ND – 6.9	0	15	Erosion of natural deposits
Radium 226 or combined radium (pCi/l)	6/02	No	0.500	NA	0	5	Erosion of natural deposits
Inorganic Contaminant	ts						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	3/02 6/02	No	0.007	ND – 0.007	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (ppb)	3/02 6/02	No	9.0	ND – 9.0	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (ppm)	3/02 6/02	No	0.73	ND – 0.73	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nickel (ppb)	3/02 6/02	No	4.0	ND – 4.0	NA	100	Pollution from mining and refining operations. Natural occurrence in soil.
Nitrate (as Nitrogen) (ppm)	3/02 6/02	No	0.202	ND – 0.202	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	3/02 6/02	No	9.4	5.05 – 9.4	NA	160	Salt water intrusion, leaching from soil
Stage 1 Disinfectant/Dis	sinfection By	y-Product (D	/DBP) Paran	neters			
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2002	No	30.31	10.2 – 56.2	NA	100	By-product of drinking water disinfection
Lead and Copper (Tap	Water)			•			
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL	Likely Source of Contamination
Copper (tap water) (ppm)	2002	No	1.3	2	1.3	1.3	Corrosion of household plumbing systems
Lead (tap water) (ppb)	2002	No	5.4	0	0	15	Corrosion of household plumbing systems

<sup>1.</sup> Value is annual average

As you can see by the tables, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements.

### WATER QUALITY TESTING RESULTS – SOUTHEAST

Contaminant and Unit of	Dates of	MCL	Highest	MCLG	MCL		Likely Source of Contamination
Measurement	sampling (mo./yr.)	Violation Y/N	Monthly % Positive Samples				Likely Source of Contamination
Total Coliform Bacteria	2002	No	0.89%	0	Presence of co bacteria in 5% o monthly sar	r more of	Naturally present in the environment
Radiological Contaminant	S						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Alpha emitters (pCi/l)	1/02 7/02?	Yes Reporting Violation	ND	NA	0	15	Erosion of natural deposits
<b>Inorganic Contaminants</b>							
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	1/02 7/02	No	0.011	ND - 0.011	. 2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	1/02 7/02	No	0.95	ND – 0.95	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead (point of entry) (ppb)	1/02 7/02	No	6.1	ND – 6.1	NA	15	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder
Sodium (ppm)	1/02 7/02	No	38.0	5.1 – 38.0	NA	160	Salt water intrusion, leaching from soil
Stage 1 Disinfectant/Disinf	fection By-P	roduct (D/D	BP) Paramet	ers			
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2002	No	51.9 <sup>1</sup>	25.1 – 85.4	NA	100	By-product of drinking water disinfection
Lead and Copper (Tap W	ater)						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of sampling sit exceeding A		AL	Likely Source of Contamination
Copper (tap water) (ppm)	2000	No	0.94	1	1.3	1.3	Corrosion of household plumbing systems
Lead (tap water) (ppb)	2000	No	4.8	2	0	15	Corrosion of household plumbing systems

<sup>1.</sup> Value is annual average

Alpha Emitters in the Southeast System did not exceed the MCL, this was a reporting violation. Results of testing for alpha emitters were reported to Florida Department of Environmental Protection without the date of analysis. The omission of the date of analysis was deemed a regular sampling violation. A revision of that report was performed by the contracted lab and re-submitted.

The state allows us to monitor some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

### WATER QUALITY TESTING RESULTS – SOUTHWEST

Microbiological Contai	ninants						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Highest Monthly # Positive Samples	MCLG	MCL		Likely Source of Contamination
Total Coliform Bacteria	2002	No	1	0	Presence of coliform bacteria in no more than one sample in a month		Naturally present in the environment
Inorganic Contaminan	ts						
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Resul	ts MCLG	MCL	Likely Source of Contamination
Sodium (ppm)	2/02	No	11.0	NA	N/A	160	Salt water intrusion, leaching from soil
Stage 1 Disinfectant/Di	sinfection B	y-Product (D	/DBP) Paran	neters		I.	,
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Resul	ts MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2002	Yes Monitoring Violation	54.6 <sup>1</sup>	28.7 – 60.3	NA	100	By-product of drinking water disinfection
Lead and Copper (Tap	Water)				•		
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of samplin sites exceeding t AL		AL	Likely Source of Contamination
Copper (tap water) (ppm)	2000	No	0.88	1	1.3	1.3	Corrosion of household plumbing systems
Lead (tap water) (ppb)	2000	No	4.8	0	0	15	Corrosion of household plumbing systems

<sup>1.</sup> Value is annual average

TTHM in the Southwest System did not exceed the MCL, the violation was a monitoring and reporting violation. A sample during each of two quarterly monitoring periods was incorrectly collected at the Water Treatment Plant point of entry rather than at the far end of the water system (point of maximum residence time, or MRT). As required by FDEP, we have increased monitoring in the Southwest system by sampling four MRT locations for the next four quarters.

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# WATER QUALITY TESTING RESULTS – SUNSHADOWS APARTMENTS

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Highest Monthly % Positive Samples	MCLG	Presence of coliform bacteria in 5% or more of monthly samples		Naturally present in the environment	
Total Coliform Bacteria	2002	No	1.56%	0				
Inorganic Contaminan	ts	•	•		•			
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination	
Barium (ppm)	2/02 3/02	No	0.016	ND – 0.016	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	
Fluoride (ppm)	2/02 3/02	No	0.158	ND – 0.158	4	4	Erosion of natural deposits; water additiv- which promotes strong teeth; discharge from fertilizer and aluminum factories	
Nitrate (as Nitrogen) (ppm)	2/02 3/02 4/02	No	0.051	ND – 0.051	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	
Sodium (ppm)	2/02 3/02	No	19.0	11.0 – 19.0	N/A	160	Salt water intrusion, leaching from soil	
Stage 1 Disinfectant/Di	sinfection B	y-Product (D	/DBP) Paran	neters				
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination	
TTHM (ppb)	2002	No	33.81	ND – 49.2	NA	100	By-product of drinking water disinfection	
Lead and Copper (Tap	Water)							
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL	Likely Source of Contamination	
Copper (tap water) (ppm)	2000	No	0.96	0	1.3	1.3	Corrosion of household plumbing systems	
Lead (tap water) (ppb)	2000	No	3.1	0	0	15	Corrosion of household plumbing systems	
econdary Contamina	nts	•	•			•		
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	Highest Result	Range of Results	MCLG	MCL	Likely Source of Contamination	
Color (color units)	2/02	No	15	ND - 15	0	15	Naturally occurring organics	

<sup>1.</sup> Result is annual average.

3/02

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